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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/337,500	06/22/1999	TOMOHISA YAMAGUCHI	2565-0175P	9078

7590   07/25/2002

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EXAMINER
NGUYEN, THU HA T

ART UNIT	PAPER NUMBER
2155	

DATE MAILED: 07/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 April 2002</u> .

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-16</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-16</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. Claim 1, 3, 5, 6, 11, 13, 15 and 16 are rejected under 35 U.S.C. 102(a) as being

    anticipated by Tock U.S. Patent No. 5,815,718.

2. Referring to Claim 1, Tock discloses a system of dynamic module configuration

    which is linked through a network comprising: a memory, linked to the network,

    for memorizing a plurality of function executing modules which execute specific

    processes (Figure 1 Item 110 and Col. 11 Lines 37-42); a request device which

    outputs an execution request for executing one of the specific processes (Figure

    1 Item 102, Col. 3 lines 52-55); and an execution device for receiving, through

    the network, the execution request output from the request device (abstract, col.

    3 lines 46-49), acquiring, through the network, one of the plurality of function

    executing modules which has a function of realizing the execution request from

    the memory, and executing the acquired function execution module (Col. 5 lines

    20-25).

3. Referring to Claim 3 and 13, Tock discloses a system of dynamic module configuration of claim 1, wherein the execution device stores the acquired function execution module after the acquired function execution module has been executed (Col. 3, lines 14-17), and re-executes the acquired function execution module stored in the execution device when it is requested to execute a module having a function corresponding to the acquired function execution module. (Random access memory, as known in the art, is organized and controlled in a way that enables data to be stored and retrieved quickly by the computer's processor.)

4. Referring to Claim 5, Tock discloses a system of dynamic module configuration of claim 1, wherein the request device and the memory are installed in a device (Figure 1 Item 100 and Item 102).

5. Referring to Claim 6, Tock discloses a system of dynamic module configuration of claim 1, wherein the request device is a client which outputs a contents request corresponding to the execution request (Figure 1 Item 102 and Col. 3 lines 52-55), the execution device is a server which receives the contents request and responds to the contents request (Figure 1 Item 104 and Col. 4 lines 1-6), and the memory is a module storing server which stores the plurality of function executing modules for responding to the contents request (Figure 1 Item 128 and Col. 11 lines 37-42).

6. Referring to Claim 11, Tock discloses a dynamic module configuration method

using a network comprising the steps of: storing in a memory a plurality of

function executing modules for executing specific processes (abstract, col. 11

Lines 37-42); outputting, through the network, an execution request for executing

one of the specific processes to an execution device; and receiving, by the

execution device, the execution request through the network, acquiring, through

the network, one of the plurality of function executing modules from the memory

which has a function of realizing the execution, and executing the acquired

function execution module (abstract, col. 3 lines 52-55 and col. 5 lines 20-25).

7. Referring to Claim 15, Tock discloses a system of dynamic module configuration

comprising: an internal resource of a device for performing an original function of

the device (Col. 11 Lines 37-42); and an execution device for receiving an

execution request, through the network, which requests a performance of a

function of the device, acquiring, from an external resource, one of a plurality of

function execution modules which has a function of realizing the execution

request, and executing the acquired function execution module, wherein the

receiving, acquiring and executing are performed by using a part of the internal

resource (Col. 2 lines 53-57 and 65-67).

8. Referring to Claim 16, Tock discloses a system of dynamic module configuration of claim 15, wherein the internal resource includes a central processing unit and a memory (Figure 1 Item 110 and 112), the execution device includes a program stored in the memory and executed by the central processing unit (Figure 1 Item 100), and the external resource includes a memory, being independent of the device, for memorizing the plurality of function execution modules (Figure 1 Item 108).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tock as applied to claim 1 above, and further in view of Snyder et al. U.S. Patent No. 6,161,147.

11. Referring to Claim 2 and 12, Tock discloses a system of dynamic module configuration of claim 1. However, Tock does not disclose wherein the execution

device deletes the acquired function execution module after the acquired function execution module has been executed. Snyder et al. teaches a variety of methods for managing deactivation and deletion of objects and server processes. Further, Snyder discloses a timeout criterion where the deletion or an object or processes takes place if the period of time since the last client requested services from the object is greater than a timeout value (Abstract). The timeout criterion and deletion of the acquired function module, as known in the art, both releases memory and resources thereby improving efficiency and performance of the system. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the dynamic module configuration system as disclosed by Tock to delete the function execution module after execution in order to release resources and improve the efficiency and performance of the system.

12. Claim 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tock as applied to claim 1 above, and further in view of Tso et al. U.S. Patent 6,247,050.

13. Referring to Claim 4 and 14, Tock discloses a system of dynamic module configuration of claim 1. However, Tock does not disclose wherein the memory caches the function execution module acquired by the execution device and provides the function execution module cached in the memory when it is

requested to acquire a module, which has a function corresponding to the function execution module cached in the memory, by the execution module. Tso et al. teaches that a server-side cache memory may be used to store both original and transcoded versions of content for later transmission to network client without the need to re-retrieve the content from Internet or to re-transcode the content (Col. 4, lines 32-36). Since the function execution module, as known in the art, is a program or a function, it can also be stored for later transmission to the network client. Memory caching provides more effective and efficient client-server communication because most programs access the same data or functions repeatedly. By keeping as much of this information as possible in static memory, the computer can avoid accessing the slower dynamic memory. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of dynamic module configuration to cache the function execution module because memory caching provides more effective and efficient client-server communication.

14. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tock as applied to claim 1 above, and further in view of Kimishima U.S. Patent 5,978,846.

15. Referring to Claim 7, Tock discloses a system of dynamic module configuration of claim 6 wherein the server includes a communication interface (Figure 1 Item

116), a user interface (Figure 1 Item 114) and a processor (Figure 1 Item 112, Processor read as contents-analyzing module and module-executing module). However, Tock does not disclose a system of dynamic module configuration wherein the server is further composed of a contents-request receiving module and module-requesting module. Kimishima discloses a system wherein the communications interface module specifically includes a contents-request receiving module for receiving the contents request from the client (Figure 1 Item 403, Figure 8 Item S401), a module requesting module for requesting a selected function executing module from the module storing server based on an analyzing result by the contents-request analyzing module (Col. 2 lines 45-49), and for receiving the selected function executing module from the module storing, and a module executing module for executing the selected function executing module received by the module requesting module (Col. 6 lines 37-41, Figure 1 Item 402). Tock fails to mention a contents-request analyzing module for analyzing the contents request received by the contents-request receiving module in order to select one of the plurality of function executing modules which has a function needed in responding to the contents request. However, a Java Virtual Machine is deemed to be inherited through the processing of a Java application disclosed by Tock. Java Virtual Machine's main job, as well known in the art, is to interpret, analyze and load the needed class files and execute the bytecodes they contain. It would have been obvious to one of ordinary skill in the art at the time the invention was made to further separate the communications interface into a

contents-request receiving module and module requesting module so that both modules can work simultaneously thereby allowing quicker and more efficient processing of information.

16. Referring to Claim 8, Tock discloses a system of dynamic module configuration of claim 7.   However Tock does not disclose a system of dynamic module where in the module storing server is composed of a plurality of modules including the module-request receiving module, module acquiring module, and a module transmitting module. Kimishima discloses a system wherein the module storing server includes a module-request receiving module for receiving a module request from the module requesting module (Figure 1 Item 405), a module acquiring module for acquiring a function executing module out of the plurality of function executing modules based on the module request received by the module-request receiving module (Col. 2 Lines 45-49), and a module transmitting module for transmitting the function executing module acquired by the module acquiring module to the server (Figure 1 Item 402). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further decompose the module storing server as disclosed by Tock to include a plurality of modules disclosed by Kimishima so that modules can work simultaneously thereby allowing quicker and more efficient processing of information.

17. Referring to Claim 9, Tock discloses a system of dynamic module configuration

    of claim 7, wherein the server further includes a module storing module for

    storing the selected function executing module acquired from the module storing

    server as many as possible in a resource of the server (Col. 3, lines 14-17).

18. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tock as

    applied to claim 8 above, and further in view of Kimishima and Tao et al.

19. Referring to Claim 10, Tock discloses a system of dynamic module configuration

    of claim 8. However, Tock does not disclose wherein the module-storing server

    further includes a module-caching module for caching the selected function-

    executing module after the selected function-executing module has been sent to

    the server. Tao et al. teaches that a server-side cache memory may be used to

    store both original and transcoded versions of content for later transmission to

    network client without the need to re-retrieve the content from Internet or to re-

    transcode the content (Col. 4, 32-36). Since the function execution module, as

    known in the art, is a program or a function, it can also be stored for later

    transmission to the network client. Memory caching provides more effective and

    efficient client-server communication because most programs access the same

    data or functions repeatedly. By keeping as much of this information as possible

    in static memory, the computer can avoid accessing the slower dynamic memory.

    Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify the module-storing server to include a

module-caching module because memory caching provides more effective and

efficient client-server communication.

Response to Arguments

20. Applicant's arguments filed April 09, 2002 have been fully considered but they

are not persuasive because of the following reasons:

21. Applicant argues that Tock fails to disclose or teach the transmission of

functional request from one device to a separate second device through a

network, which includes a memory, link to the network, for storing a plurality of

function executing modules which execute specific processes, a request device

which outputs an execution request for executing one of the specific processes

and an execution device for receiving, through the network, the execution

request output from the request deice, acquiring, through the network, one of the

plurality of function execution modules which has a function of realizing the

execution request from the memory, and executing the acquired function

execution module. In response to Applicant's argument, Examiner concludes

that Tock does teach and disclose the transmission of functional request from

one device to a separate second device through a network, which includes a

memory, link to the network, for storing a plurality of function executing modules

which execute specific processes, a request device which outputs an execution

request for executing one of the specific processes and an execution device for

receiving, through the network, the execution request output from the request

deice, acquiring, through the network, one of the plurality of function execution

modules which has a function of realizing the execution request from the

memory, and executing the acquired function execution module as shown in

abstract, figures 1-2, col. 1 lines 40-col. 2 lines 11, col. 3 lines 46-55, col. 4 lines

1-44, col. 5 lines 20-25, col. 11 Lines 37-42.

22. Further, Applicant argues that Snyder, Tso and Kimishima do not make up for the

deficiencies of Tock. Examiner concludes that Snyder does teach and disclose

the execution device deleted the acquired function execution module after the

acquired function execution module has been executed as shown in abstract,

figures 6, col. 2 lines 15-col. 3 lines 7. Tso teaches and discloses the memory

caches the function execution module acquired by the execution device and

provides the function execution module cached in the memory when it is

requested to acquire a module, which has a function corresponding to the

function execution module cached in the memory, by the execution module as

shown in abstract, figures 3, 6, col. 4 lines 30-col. 5 lines 7. Finally, Kimishima

teaches the module storing server includes a module-request receiving module

for receiving a module request from the module requesting module, a module

acquiring module for acquiring a function executing module out of the plurality of

function executing modules based on the module request received by the

module-request receiving module, and a module transmitting module for

transmitting the function executing module acquired by the module acquiring

module to the server as shown in abstract, figure 1, col. 2 lines 17-col. 4 lines 29.

Therefore, Examiner concludes that Tock, Snyder, Tso and Kimishima do teach

and suggest applicant's claimed invention.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

24. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Thu Ha Nguyen whose telephone number is 703-305-

7447. The examiner can normally be reached on Mon-Fri (8:30am-5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ayaz Sheikh can be reached on 703-305-9648. The fax phone numbers for

the organization where this application or proceeding is assigned are 703-746-7240 for

regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 703-305-

3900.

Thu Ha Nguyen

July 19, 2002

AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100